Arboviral Surveillance Summary, 2008
New Hampshire Department of Health and Human Services

Summary

The New Hampshire Department of Health and Human Services (NH DHHS) identified Eastern Equine Encephalitis (EEE) virus and West Nile virus (WNV) in 2008. Testing performed at the NH Public Health Laboratories (PHL) identified EEE in mosquitoes and an emu and WNV in mosquitoes. No human cases were detected. Given the continued EEE activity detected during the 2008 season, NH DHHS encourages communities to maintain heightened levels of mosquito-borne disease education, surveillance, and control during 2009.

Table: Specimens Tested and WNV/EEE Positives by Year, 2005-2008*

Species	2005			2006			2007			2008		
	Tested	WNV+	EEE+	Tested	WNV+	EEE+	Tested	WNV+	EEE+	Tested	WNV+	EEE+
Wild Birds	241	46	52	134	22	5	31	2	0	0	0	0
Mosquito Pools	3969	1	15	11682	0	40	10674	0	6	10020	1	8
Veterinary	34	0	16	8	0	1	8	0	2	7	0	1
Humans	230	0	7	216	0	0	185	0	3	205	0	0

*Comparison between years must consider variations in surveillance criteria.

Human Surveillance

Between January 1 and December 31, 2008, 205 patients were tested for EEE and WNV at the NH PHL. No human cases of EEE or WNV were identified in NH residents during this period.

During 2008, a Massachusetts resident tested positive for EEE. The individual developed symptoms of illness in September 2008 and later died. During the two weeks prior to illness, the patient traveled in both New Hampshire and Maine and spent significant time outdoors. The investigation suggests the patient acquired EEE in the area surrounding Gorham (Coos County), New Hampshire or Naples (Cumberland County), Maine.

Animal Surveillance

Between January 1 and October 31, 2008, seven veterinary specimens were tested for EEE and WNV at the NH PHL. One emu from Barnstead tested positive for EEE (onset of illness August 31, 2008).

Mosquito Surveillance

Between June 1 and October 31, 2008, 10020 mosquito samples were tested for EEE and WNV at the NH PHL. Eight samples were positive for EEE and one sample was positive for WNV. Positive samples were identified in eight towns within Rockingham and Hillsborough counties. Mosquito species positive for EEE were *Culiseta melanura* (3),

Culiseta morsitans (2), *Ochlerotatus canadensis* (1), *Culex pipiens/restuans* (1), *Aedes vexans* (1); the species positive for WNV was *Culiseta melanura* (see http://www.dhhs.nh.gov for results by municipality and date). *Culiseta melanura* and *Culiseta morsitans* feed almost exclusively on birds and are recognized as important primary vectors of EEE. *Aedes vexans* and possibly *Ochlerotatus canadensis* are thought to be important EEE bridge vectors, involved in the transmission of EEE virus to humans.

Public Health Threat Declaration

The NH Public Health threat declaration for 2006, involving 51 municipalities, was carried over into 2008. Based on EEE activity during 2008, the threat declaration was expanded to include seven additional municipalities (Figure 1). Additional information on declaration of a Public Health threat and a list of affected municipalities are available at http://www.dhhs.nh.gov.

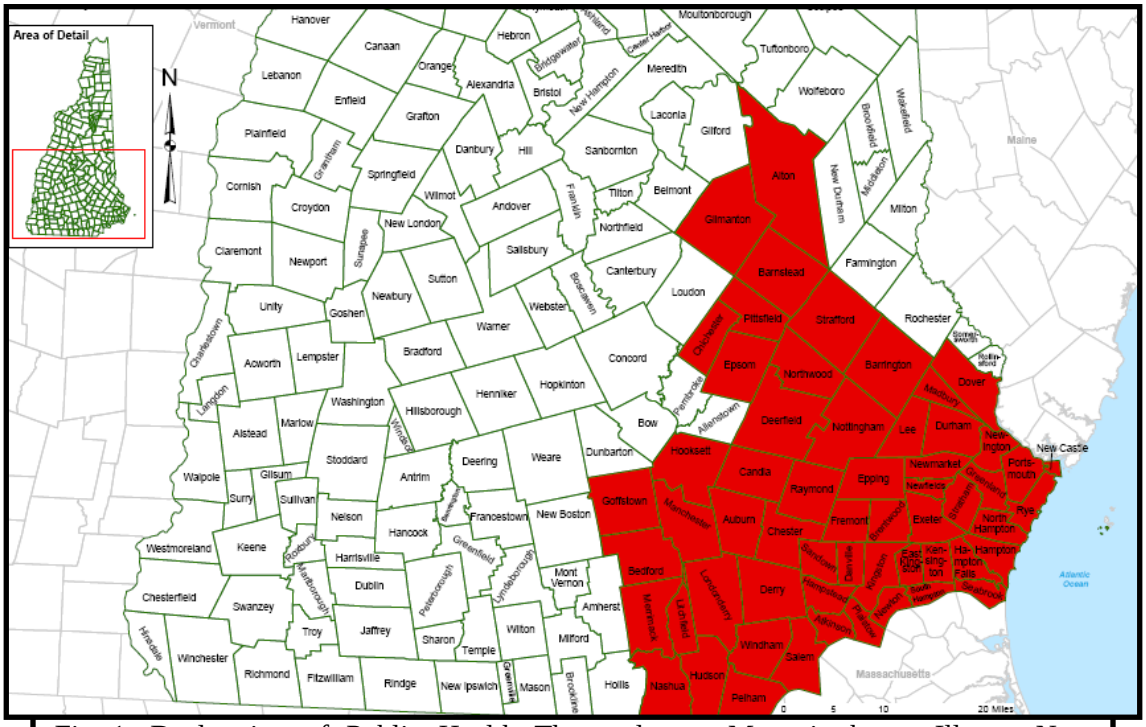

Fig 1. Declaration of Public Health Threat due to Mosquito-borne Illness, New Hampshire, 2008

Regional Risk Levels

Beginning in 2008, the NH DHHS Arbovirus Program estimated human risk levels for defined "Focal Areas" in the State. "Focal Areas" may incorporate multiple municipalities and are based on integrating mosquito habitat, mosquito abundance, current and historic virus activity, and weather conditions needed to present risk of human disease. During the arboviral transmission season, estimated risk levels were announced to the public, local officials, and state partners through email, press releases, and postings to the NH DHHS website. As of September 2008, NH DHHS announced

the estimated risk level for southeastern NH as a moderate risk for a human outbreak of EEE (Figure 2). NH DHHS will continue the use of regional risk levels during 2009. Additional information on risk levels is available at http://www.dhhs.nh.gov.

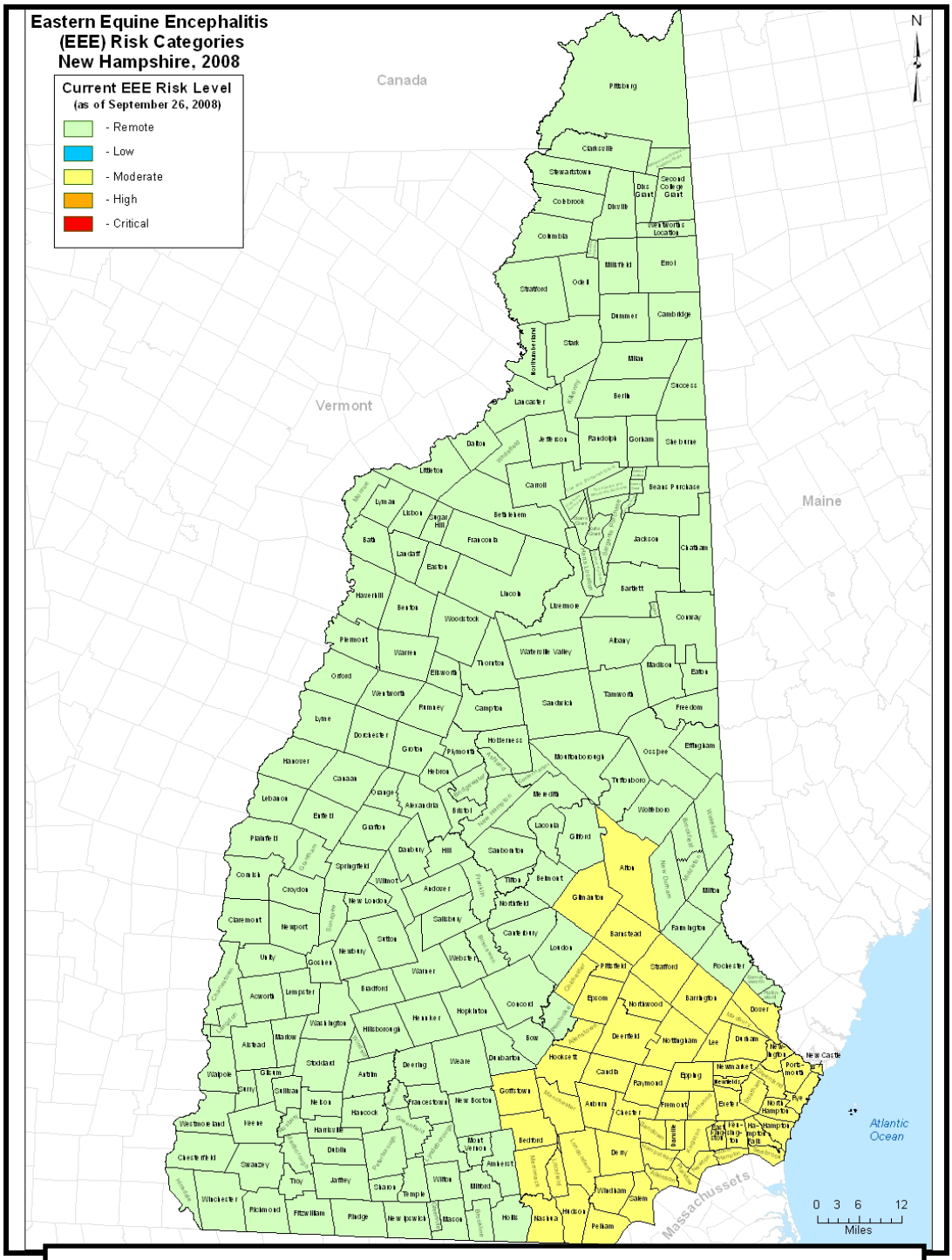

Figure 2: NH DHHS-Estimated Eastern Equine Encephalitis Risk Levels for NH, as of September 2008